REPAIR PARTS CATALOG FOR SUNNEN® GHSS SERIES HONING TOOLS

MODELS:

GHSS-1480, -1950, -2440, -2800, -3410, -4410 & GH4SS-3410

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SUNNEN® PRODUCTS COMPANY
7910 MANCHESTER ROAD • ST. LOUIS, MO 63143, U.S.A. • PHONE: 314-781-2100

X-GHSS-4402C

Like any machinery, this equipment may be dangerous if used improperly. Be sure to read and follow instructions for operation of equipment.

INTRODUCTION

Illustrations show all major components in exploded detail. Item numbers on each illustration are keyed to the corresponding parts list, providing a descriptive identification of each part.

The parts lists include assemblies as well as detail parts. An item listed without a part number can be obtained as a component of the complete assembly of which it is a part.

Standard hardware items are listed with complete descriptions, such as Item 29 below. **These may be purchased at your local hardware store,** but it is important to replace an item with one having the same dimensions as the original. In some places brand names and part numbers are shown. These may change depending upon availability.

Sunnen Products Company reserves the right to make changes, without notice, to materials, specifications, colors, designs and accessories included with units.

HOW TO ORDER

When ordering replacement parts be sure to include the following information to ensure prompt shipment of correct parts:

1. The part number and description of each part desired, obtained from this parts catalog.

2. The quantity of each part desired.

3. The voltage, frequency and phase, when ordering electrical parts.

4. The model and serial number of the machine, obtained from the name plate, where there is any question concerning a part.

HOW TO USE THIS PARTS LIST

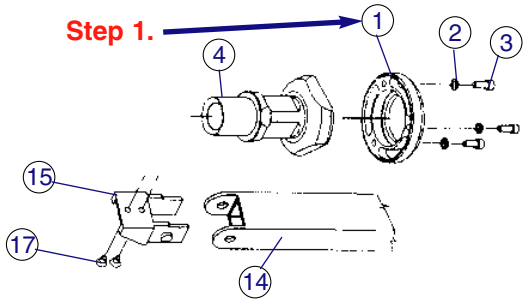
Step 1. – Locate desired part on illustration. Note item number.

Step 2. – Locate item number in the parts list.

Step 3. – If the item has a part number listed, order by part number and the description. A part number in light face type indicates that it is a component of the last preceding part number in bold face type.

Step 4. – If no number is listed, order the part number of the unit of which the desired part is a component. **ORDER ONLY BY PART NUMBER AND DESCRIPTION – NOT** by item number.

NOTE: In this manual, parts may be followed by "(For CE Machines)" or "(For Non-CE Machines)" to denote domestic machines from exported machines. The CE version is constructed to meet the requirements of the European market, and is available to any customer.



ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	**MVH-4499A**	**1**	**....Spindle Cap** *includes*
2	PHSM-405	3	.....Screw (M6 x 1 x 16 SHCS)
3	PHW-354	3	.....Washer (M6)
4	**MVH-4422**	**1**	**....Inner Spindle Nose**
14	**PEM-870A**	**1**	**....Cable Carrier** *includes*
15	PEM-871	1	.....Cable Carrier Bracket
16	PEM872	1	.....Cable Carrier Bracket
17	**PHSM-600**	**1**	**....Screw** (M3 x 0,5 x 5mm FHCS)

Step 2. → item 1
Step 3. → item 2
Step 4. → items 15 and 16

GENERAL INFORMATION

The Sunnen® equipment has been designed and engineered for a wide variety of parts within the capacity and limitation of the equipment. With proper care and maintenance this equipment will give years of service.

READ THE FOLLOWING INSTRUCTIONS CAREFULLY AND THOROUGHLY BEFORE UNPACKING, INSPECTING, OR INSTALLING THIS EQUIPMENT.

IMPORTANT: Read any supplemental instructions BEFORE installing this equipment. These supplemental instructions give you important information to assist you with the planning and installation of your Sunnen equipment.

Sunnen Technical Service Department is available to provide telephone assistance for installation, programming, & troubleshooting of your Sunnen equipment. All support is available during normal business hours, 8:00 AM to 4:30 PM Central Time.

Review all literature provided with your Sunnen equipment. This literature provides valuable information for proper installation, operation, and maintenance of your equipment. Troubleshooting information can also be found within the Instructions. If you cannot find what you need, call for technical support.

Where applicable, programming information for your Sunnen equipment is also included. Most answers can be found in the literature packaged with your equipment.

Help us help you. When ordering parts, requesting information, or technical assistance about your equipment, please have the following information available:

- Have ALL MANUALS on hand. The Customer Services Representative or Technician will refer to it.
- Have Model Number and Serial Number printed on your equipment Specification Nameplate.
- Where Applicable: Have Drive model and all nameplate data. Motor type, brand, and all nameplate data.

For Troubleshooting, additional information may be required:

- Power distribution information (type - delta, wye, power factor correction; other major switching devices used, voltage fluctuations)
- Installation Wiring (separation of power & control wire; wire type/class used, distance between drive and motor, grounding).
- Use of any optional devices/equipment between the Drive & motor (output chokes, etc.).

For fast service on your orders call:

Sunnen Automotive Customer Service toll free at: 1-800-772-2878

Sunnen Industrial Customer Service toll free at: 1-800-325-3670

Customers outside the USA, contact your local authorized Sunnen Distributor.

Additional information available at: http://www.sunnen.com or e-mail: sunnen@sunnen.com

NOTE: Sunnen reserves the right to change or revise specifications and product design in connection with any feature of our products contained herein. Such changes do not entitle the buyer to corresponding changes, improvements, additions, or replacements for equipment, supplies or accessories previously sold. Information contained herein is considered to be accurate based on available information at the time of printing. Should any discrepancy of information arise, Sunnen recommends that user verify the discrepancy with Sunnen before proceeding.

ESD PREVENTION REVIEW

Let's review the basics of a sound static control system and its effective implementation. First, in the three step plan:

1. Always ground yourself when handling sensitive components or assemblies.
2. Always use a conductive or shielded container during storage or transportation. These materials create a Faraday cage which will isolate the contents from static charges.
3. Open ESD safe containers only at a static safe work station.

At the static safe work station, follow these procedures before beginning any work:

A. Put on your wrist strap or foot grounding devices.

B. Check all grounding cords to make sure they are properly connected to ground, ensuring the effective dissipation of static charges.

C. Make sure that your work surface is clean and clear of unnecessary materials, particularly common plastics.

D. Anti-static bubble wrap has been included for use at the machine when an ESD safe workstation is not available.

You are now properly grounded and ready to begin work. Following these few simple rules and using a little common sense will go a long way toward helping you and your company in the battle against the hazards of static electricity. When you are working with ESD sensitive devices, make sure you:

GROUND

ISOLATE

NEUTRALIZE

SUNNEN® LIMITED PRODUCT WARRANTY

Sunnen® Products Company and its subsidiaries (SPC) warrant that all new SPC honing machines, gaging equipment, tooling, and related equipment will be free of defects in material and/or workmanship for a period of one year from the date of original shipment from SPC.

Upon prompt notification of a defect during the one-year period, SPC will repair, replace, or refund the purchase price, with respect to parts that prove to be defective (as defined above). Any equipment or tooling which is found to be defective from improper use will be returned at the customer's cost or repaired (if possible) at customer's request. Customer shall be charged current rates for all such repair.

Prior to returning any SPC product, an authorization (RMA#) and shipping instructions must be obtained from the Customer Service Department or items sent to SPC will be returned to the customer.

Warranty Limitations and Exclusions This Warranty does not apply to the following:

- Normal maintenance items subject to wear and tear: (belts, fuses, filters, etc).
- Damages resulting from but not limited to:
  - › Shipment to the customer (for items delivered to customer or customer's agent F.O.B., Shipping Point)
  - › Incorrect installation including improper lifting, dropping and/or placement
  - › Incorrect electric power (beyond +/- 10% of rated voltage) including intermittent or random voltage spikes or drops
  - › Incorrect air supply volume and/or pressure and/or contaminated air supply
  - › Electromagnetic or radio frequency interference from surrounding equipment (EMI, RFI)
  - › Storm, lightning, flood or fire damage
  - › Failure to perform regular maintenance as outlined in SPC manuals
  - › Improper machine setup or operation causing a crash to occur
  - › Misapplication of the equipment
  - › Use of non-SPC machines, tooling, abrasive, fixturing, coolant, repair parts, or filtration
  - › Incorrect software installation and/or misuse
  - › Non-authorized customer installed electronics and/or software
  - › Customer modifications to SPC software

THE LIMITED WARRANTY DESCRIBED HEREIN IS EXPRESSLY IN LIEU OF ALL ANY OTHER WARRANTIES. SPC MAKES NO REPRESENTATION OR WARRANTY OF ANY OTHER KIND, EXPRESS OR IMPLIED, WHETHER AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. SPC IS NOT RESPONSIBLE FOR THE IMPROPER USE OF ANY OF ITS PRODUCTS. SPC SHALL NOT BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO: LOSS OF USE, REVENUE, OR PROFIT. SPC ASSUMES NO LIABILITY FOR PURCHASED ITEMS PRODUCED BY OTHER MANUFACTURERS WHO EXTEND SEPARATE WARRANTIES. REGARDLESS OF ANY RIGHTS AFFORDED BY LAW TO BUYER, SPC's LIABILITY, IF ANY, FOR ANY AND ALL CLAIMS FOR LOSS OR DAMAGES WITH RESPECT TO THE PRODUCTS, AND BUYER'S SOLE AND EXCLUSIVE REMEDY THEREFORE, SHALL IN ALL EVENTS BE LIMITED IN AMOUNT TO THE PURCHASE PRICE OF THAT PORTION OF THE PRODUCTS WITH RESPECT TO WHICH A VALID CLAIM IS MADE.

Shipping Damages

Except in the case of F.O.B., Buyer's destination shipments, SPC will not be liable for any settlement claims for obvious and/or concealed shipping damages. The customer bears the responsibility to unpack all shipments immediately and inspect for damage. When obvious and/or concealed damage is found, the customer must immediately notify the carrier's agent to make an inspection and file a claim. The customer should retain the shipping container and packing material.

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Any alteration or reverse engineering of the software is expressly forbidden and is in violation of this agreement.

SPC reserves the right to update the software covered by this agreement at any time without prior notice and any such updates are covered by this agreement.

SAFETY INSTRUCTIONS

READ FIRST

This machine, like any equipment, may be dangerous if used improperly. Please read all warnings and instructions before attempting to use this machine.

Always disconnect power at main enclosure before servicing machine.[1]

Always wear eye protection when operating this machine.

NEVER open or remove any machine cover or protective guard with power "ON." Always disconnect power at main enclosure before servicing this equipment.[1]

DO NOT attempt any repair or maintenance procedure beyond those described in this book. Contact your Sunnen® Field Service Engineer or Technical Services Representative for repairs not covered in these instructions.

Due to the wide variety of machine configurations, all possibilities cannot be described in these instructions. Instructions for safe use and maintenance of optional equipment ordered through Sunnen, will be provided through separate documentation and/or training provided by your Sunnen Field Service Engineer or Technical Services Representative.

DO NOT attempt to defeat any safety device on this machine or on any of the optional equipment.

If specially built automation components are added to this system, be sure that safety is not compromised. If necessary, obtain special enlarged work area safety system from Sunnen Products Co.

CE Indicates CE version ONLY.

[1] DO NOT touch electrical components until main input power has been turned off and *CHARGE* lamps are extinguished. WARNING: The capacitors are still charged and can be quite dangerous.

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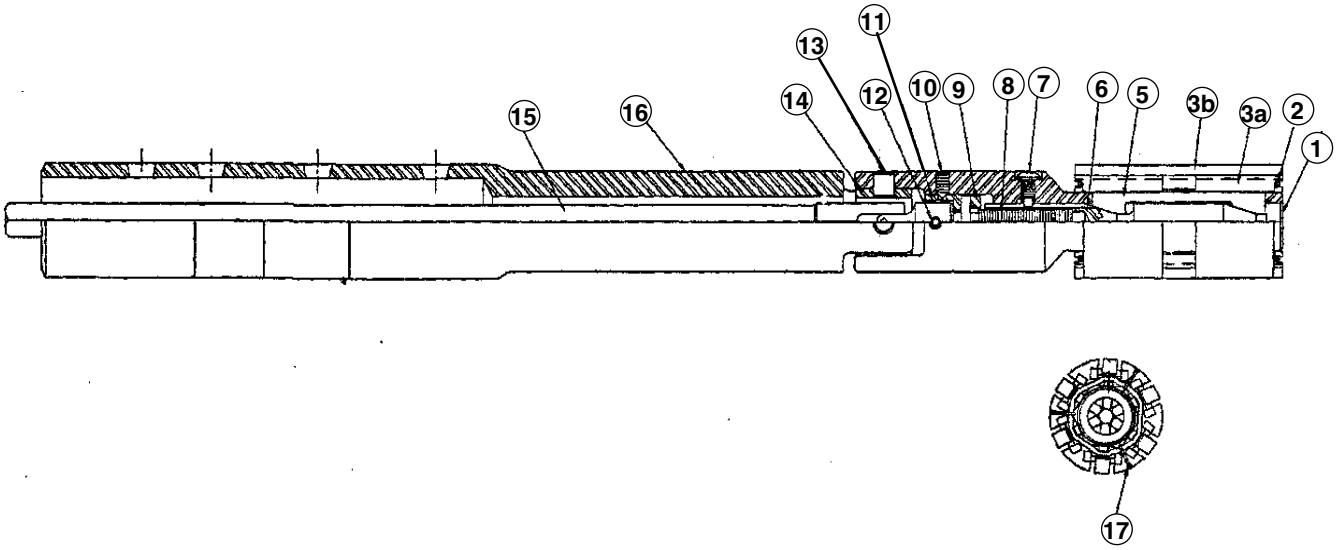

FIGURE A – GHSS-1480 HONE HEAD

PARTS LIST COVERING FIGURE "A"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11D322	1	.....Body (1.48" dia. x .778" across slots)
2	F40925	2	.....O-Ring
3a	GH2581(___)	6	.....Stone Sets (1.48-1.56")*
3a	GH2582(___)	6	.....Stone Sets (1.56-1.64")*
3a	GH2583(___)	6	.....Stone Sets (1.64-1.72")*
3a	GH2584(___)	6	.....Stone Sets (1.72-1.80")*
3a	GH2585(___)	6	.....Stone Sets (1.80-1.88")*
3a	GH2586(___)	6	.....Stone Sets (1.88-1.96")*
3b	- - -	6	.....Abrasives
5	G13B1071	6	.....Expander Plate (.294" high)
6	G12B354	1	.....Cone
7	G20A16928	1	.....Setscrew (DPBHSS)
8	G17B405	1	.....Expansion Screw
9	G20A189	1	.....Washer
10	F4493	4	.....Setscrew (#10-32 x l/4" lg. CPSHSS)
11	G20A188	1	.....Spacer
12	F45714	1	.....Dowel Pin
13	G16A210	4	.....Drive Pin
14	G15A175	1	.....Universal Block
15	G17C176	1	.....Expansion Rod Weldment
16	G18C245	1	.....Driveshank
17	G24A127	6	.....Spring Retainer
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown

** Stone Sets includes Stoneholders (3a) & Abrasive (3b). Refer to Sunnen Bore Sizing & Finishing Supplies Catalog (X-SP-5500). Sold Separately.*

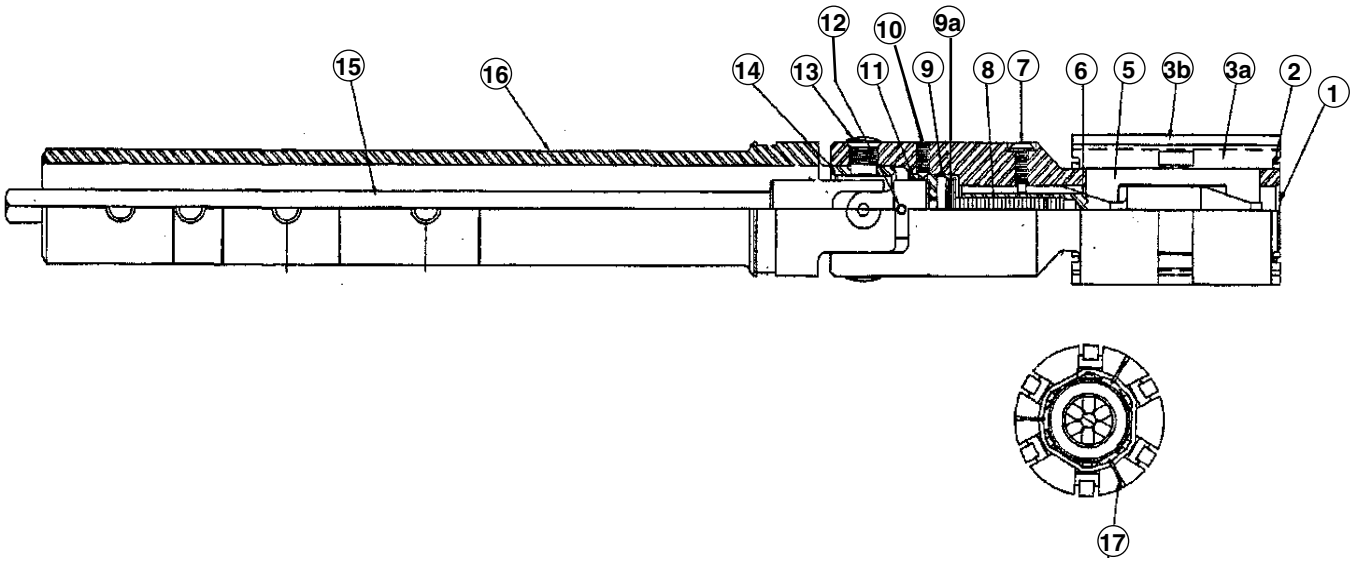

FIGURE B – GHSS-1950 HONE HEAD

PARTS LIST COVERING FIGURE "B"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11D323	1	.....Body (1.95" dia, 1.088" across slots)
2	F40926	2	.....O-Ring
3a	GH2583(___)	6	.....Stone Sets (1.95-2.16")*
3a	GH2585(___)	6	.....Stone Sets (2.11-2.32")*
3a	GH2587(___)	6	.....Stone Sets (2.27-2.48")*
3b	- - -	6	.....Abrasives
5	G13B1072	6	.....Expander Plate (.499" high)
6	G12B353	1	.....Cone
7	G20A16929	1	.....Setscrew (DPBHSS)
8	G17B382	1	.....Expansion Screw
9	F47538	1	.....Thrust Bearing
9a	F47537	1	.....Thrust Washer
10a	F4493	4	.....Setscrew (#10-32 x l /4" lg. CPSHSS)
10b	F2512	4	.....Setscrew (#10-32 x l /4" lg. CPSHSS)
11	G20A185	1	.....Spacer
12	F45711	1	.....Dowel Pin
13	G16A203	4	.....Drive Screw
14	G15A173	1	.....Universal Block
15	G17C177	1	.....Expansion Rod Weldment
16	G18C234	1	.....Driveshank
17	G24A127	6	.....Spring Retainer
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown

** Stone Sets includes Stoneholders (3a) & Abrasive (3b). Refer to Sunnen Bore Sizing & Finishing Supplies Catalog (X-SP-5500). Sold Separately.*

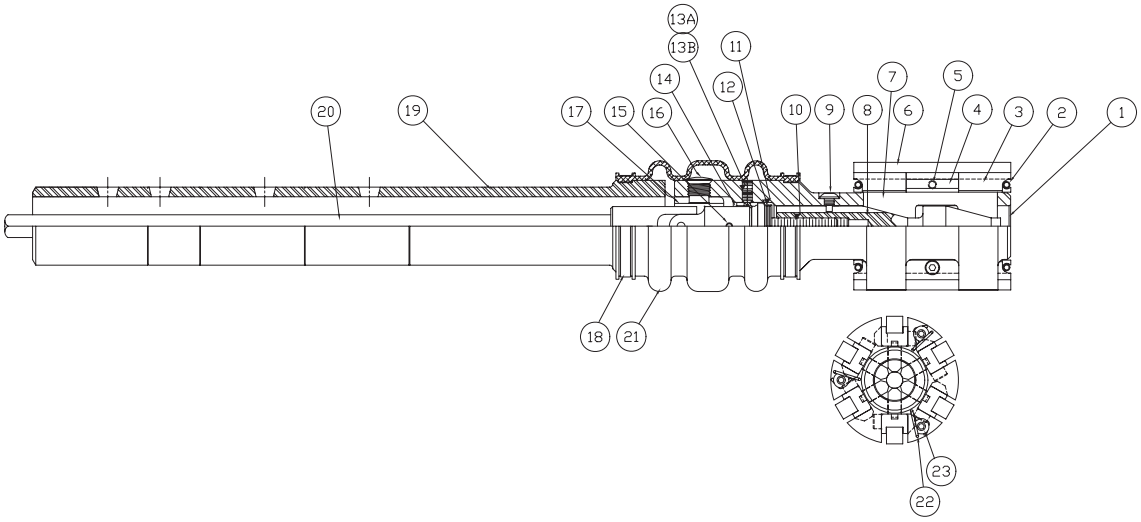

FIGURE C – GHSS-2440 HONE HEAD

PARTS LIST COVERING FIGURE "C"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11C445	1	.....Body (2.44" OD, 1.300" across slots)
2	F5043GH2	4	.....Retaining Spring
-	GHG14C251241A	1	.....Stoneholder Set (.250" high) *includes 3, 4 & 5*
-	GHG14C251242A	1	.....Stoneholder Set (.312" high) *includes 3, 4 & 5*
3	- - -	6	.....Stoneholder
4	- - -	1	.....Clamp
5	PHSM613	1	.....Screw (M4 x 0,7 x 8mm SHCS)
3	GHG14C233241A	1	.....Stoneholder (.375" high) *includes 3, 4 & 5*
5	PHSM402	1	.....Screw (M5 x 0,8 x 16mm SHCS)
6	- - -	6	.....Abrasive (5/16 x .320 x 3" lg.)
7	G13A284	6	.....Expander Plate (.494" high)
8	G12B348	1	.....Cone
9	G20A16915	1	.....Setscrew (DPBHSS)
10	G17G184*	1	.....Expansion Screw
11	F47537	2	.....Thrust Washer
12	F47538	1	.....Thrust Bearing
13a	F4493	4	.....Setscrew (#10-32 x 1/4" lg. CPSHSS)
13b	F2512	4	.....Setscrew (#10-32 x 1/4" lg. CPSHSS)
14	G20A185*	1	.....Spacer
15	F45711	1	.....Dowel Pin
16	G16A203	4	.....Drive Screw
17	G15A173	1	.....Universal Block
18	F5121GH2	4	.....Boot Tie Strap
19	G18C234	1	.....Driveshank
20	G17G185*	1	.....Expansion Rod Weldment
21	F43937	1	.....Universal Joint Boot Set
22	G24A126	6	.....Spring Retainer
23	PHSM623	6	.....Screw (M4 x 0,7 x 8mm BSHCS)
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown ** If old Expansion Screw stem measures 1/4" order items 10, 14, & 20.*

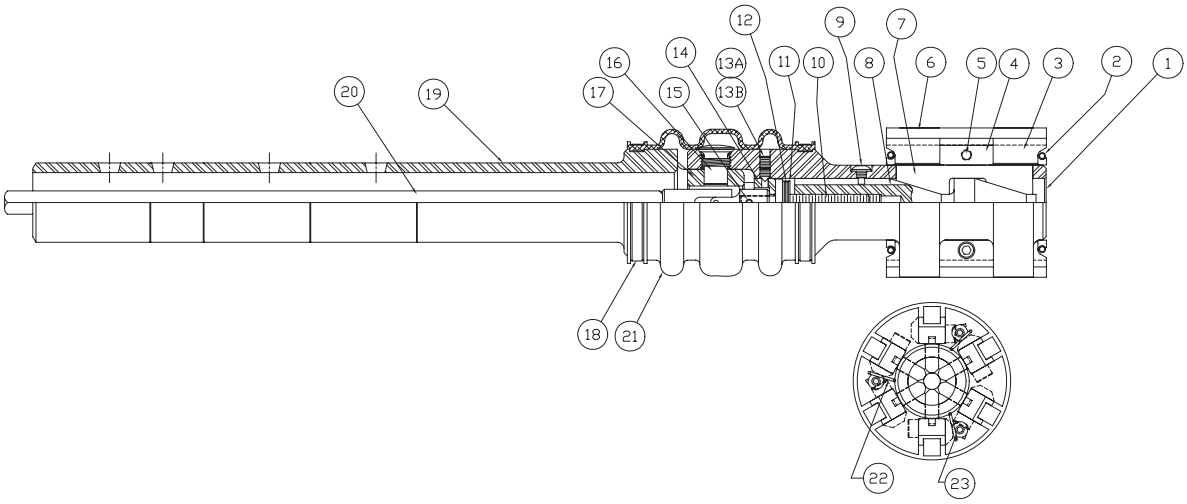

FIGURE D – GHSS-2800 HONE HEAD

PARTS LIST COVERING FIGURE "D"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11C444	1	.....Body (2.80" OD, 1.410" across slots)
2	F5042GH2	4	.....Retaining Spring
-	GHG14C233281A	1	.....Stoneholder Set (.375" high) *includes 3, 4 & 5*
-	GHG14C233284A	1	.....Stoneholder Set (.500" high) *includes 3, 4 & 5*
-	GHG14C233283A	1	.....Stoneholder Set (.625" high) *includes 3, 4 & 5*
3	- - -	6	.....Stoneholder
4	- - -	1	.....Clamp
5	PHSM402	1	.....Screw (M5 x 0,8 x 16mm SHCS)
6	- - -	6	.....Abrasive (5/16 x .320 x 3" lg.)
7	G13A285RM	6	.....Expander Plate (.549" high)
8	G12B347	1	.....Cone
9	G20A16915	1	.....Setscrew (DPBHSS)
10	G17G184*	1	.....Expansion Screw
11	F47537	2	.....Thrust Washer
12	F47538	1	.....Thrust Bearing
13a	F4493	4	.....Setscrew (#10-32 x 1/4" lg. CPSHSS)
13b	F2512	4	.....Setscrew (#10-32 x 1/4" lg. CPSHSS)
14	G20A185*	1	.....Spacer
15	F45711	1	.....Dowel Pin
16	G16A202	4	.....Drive Screw
17	G15A171	1	.....Universal Block
18	F5121GH2	2	.....Boot Tie Strap
19	G18C233	1	.....Driveshaft
20	G17G185*	1	.....Expansion Rod Weldment
21	F43936	1	.....Universal Joint Boot Set
22	G24A126	6	.....Spring Retainer
23	PHSM623	6	.....Screw (M4 x 0,7 x 8mm BSHCS)
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown ** If old Expansion Screw stem measures 1/4" order items 10, 14, & 20.*

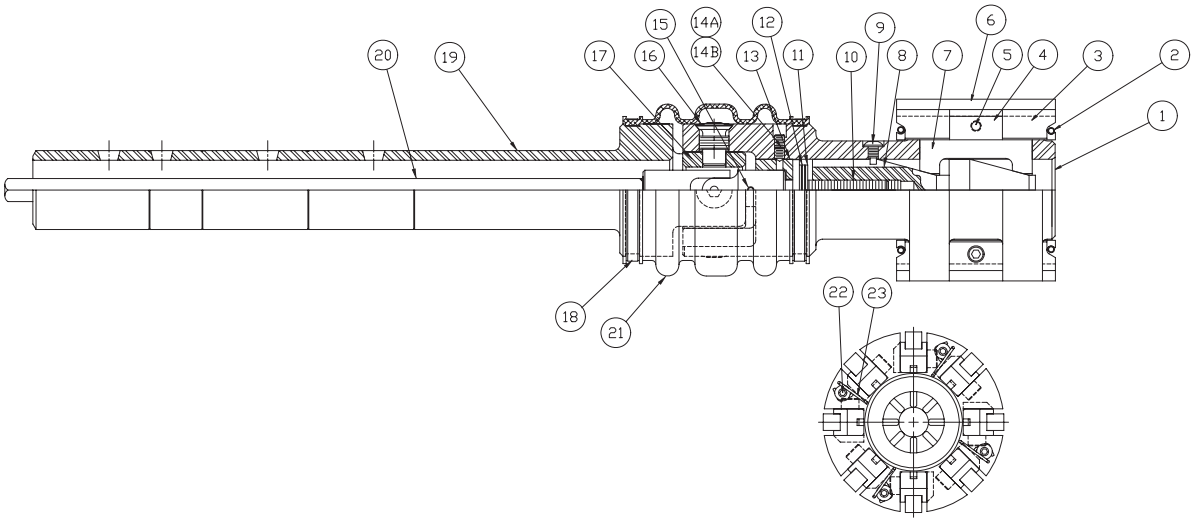

FIGURE E – GHSS-3410 HONE HEAD

PARTS LIST COVERING FIGURE "E"

ITEM NO.	ORDER BY PART NUMBER	QTY.	DESCRIPTION
1	G11C459	1	.....Body (3.41" OD, 1.876" across slots)
2	F5041GH2	2	.....Retaining Spring
-	GHG14C233347A	1	.....Stoneholder Set (.447" high) *includes 3, 4 & 5*
-	GHG14C233348A	1	.....Stoneholder Set (.582" high) *includes 3, 4 & 5*
-	GHG14C233349A	1	.....Stoneholder Set (.717" high) *includes 3, 4 & 5*
-	GHG14C2333410A	1	.....Stoneholder Set (.852" high) *includes 3, 4 & 5*
3	- - -	8	.....Stoneholder
4	- - -	1	.....Clamp
5	PHSM402	1	.....Screw (M5 x 0,8 x 16mm SHCS)
6	- - -	8	.....Abrasive (5/16 x .320 x 3" lg.)
7	G13A290	8	.....Expander Plate
8	G12B337	1	.....Cone
9	G20A1696	1	.....Setscrew (DPBHSS)
10	G17B341	1	.....Feed Screw
11	F47531	1	.....Thrust Washer
12	F47530	2	.....Thrust Bearing
13	G20A177	1	.....Spacer
14a	F4493	4	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
14b	F2512	4	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
15	F45711	1	.....Dowel Pin
16	G16A182	4	.....Drive Screw
17	G15A167	1	.....Universal Block
18	F5121GH2	4	.....Boot Tie Strap
19	G18C222	1	.....Driveshank
20	G17C159	1	.....Expansion Rod & Universal Joint
21	F43927	1	.....Universal Joint Boot Set
22	PHSM623	8	.....Screw (M4 x 0,7 x 8mm BSHCS)
23	G24A125	8	.....Spring Retainer
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown

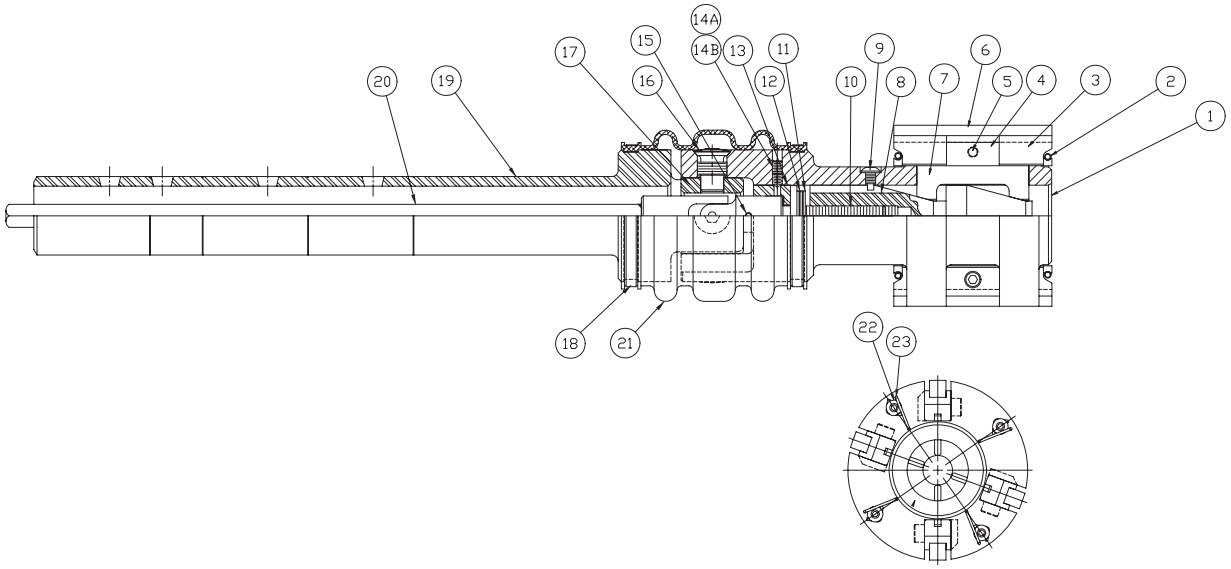

FIGURE F – GH4SS-3410 HONE HEAD

PARTS LIST COVERING FIGURE "F"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11C463	1	.....Body (3.41" OD, 1.876" across slots)
2	F5046GH2	4	.....Retaining Spring
-	GHG14C2334347A	1	.....Stoneholder Set (.447" high) *includes 3, 4 & 5*
-	GHG14C2334348A	1	.....Stoneholder Set (.582" high) *includes 3, 4 & 5*
-	GHG14C2334349A	1	.....Stoneholder Set (.717" high) *includes 3, 4 & 5*
-	GHG14C23343410A	1	.....Stoneholder Set (.852" high) *includes 3, 4 & 5*
3	- - -	4	.....Stoneholder
4	- - -	1	.....Clamp
5	PHSM402	1	.....Screw (M5 x 0,8 x 16mm SHCS)
6	- - -	4	.....Abrasive (5/16 x .320 x 3" lg.)
7	G13A289	4	.....Expander Plate
8	G12B337	1	.....Cone
9	G20A1696	1	.....Setscrew (DPBHSS)
10	G17B341	1	.....Feed Screw
11	F47531	1	.....Thrust Washer
12	F47530	2	.....Thrust Bearing
13	G20A177	1	.....Spacer
14a	F4493	4	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
14b	F2512	4	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
15	F45711	1	.....Dowel Pin
16	G16A182	4	.....Drive Screw
17	G15A167	1	.....Universal Block
18	F5121GH2	4	.....Boot Tie Strap
19	G18C222	1	.....Driveshaft
20	G17C159	1	.....Expansion Rod & Universal Joint
21	F43927	1	.....Universal Joint Boot Set
22	PHSM623	8	.....Screw (M4 x 0,7 x 8mm BSHCS)
23	G24A125	8	.....Spring Retainer
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown

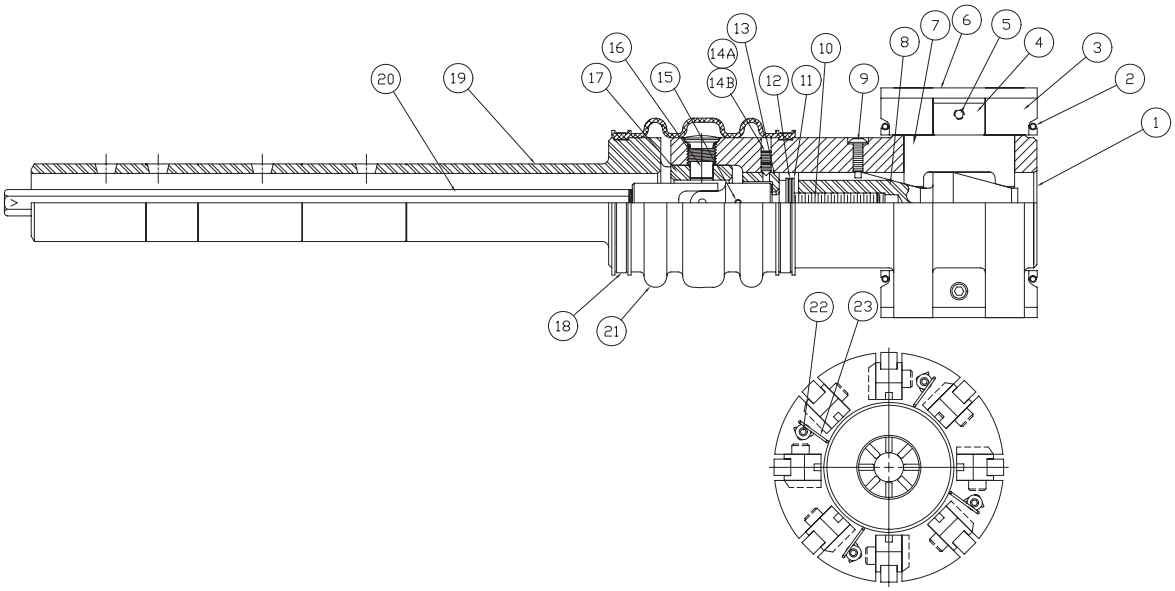

FIGURE G – GHSS-4410 HONE HEAD

PARTS LIST COVERING FIGURE "G"

ITEM NO.	**ORDER BY PART NUMBER**	QTY.	DESCRIPTION
1	G11D320	1	.....Body (4.41" OD, 2.606" across slots)
2	F5045GH2	2	.....Retaining Spring (8.25" long)
-	GHG14C233448A	1	.....Stoneholder Set (.528" high) *includes 3, 4 & 5*
-	GHG14C233449A	1	.....Stoneholder Set (.717" high) *includes 3, 4 & 5*
-	GHG14C2334410A	1	.....Stoneholder Set (.852" high) *includes 3, 4 & 5*
-	GHG14C2334411A	1	.....Stoneholder Set (.987" high) *includes 3, 4 & 5*
3	- - -	8	.....Stoneholder
4	- - -	1	.....Clamp
5	PHSM402	1	.....Screw (M5 x 0,8 x 16mm SHCS)
6	- - -	8	.....Abrasive (5/16 x .320 x 3" lg.)
7	G13A296	8	.....Expander Plate (1.021" high)
8	G12B337	1	.....Cone
9	G20A16922	1	.....Setscrew (DPBHSS)
10	G17B341	1	.....Feed Screw
11	F47531	1	.....Thrust Washer
12	F47530	2	.....Thrust Bearing
13	G20A177	1	.....Spacer
14a	F4493	2	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
14b	F2512	2	.....Setscrew (#10-32 x 1/4" lg. CPSHCS)
15	F45711	1	.....Dowel Pin
16	G16A182	4	.....Drive Screw
17	G15A167	1	.....Universal Block
18	F5121GH2	2	.....Boot Tie Strap
19	G18C222	1	.....Driveshaft
20	G17C159	1	.....Expansion Rod & Universal Joint
21	F43927	1	.....Universal Joint Boot Set
22	PHSM623	8	.....Screw (M4 x 0,7 x 8mm BSHCS)
23	G24A125	8	.....Spring Retainer
N/S	GH50	1	.....Garter Spring Tool

N/S indicates Not Shown

FRACTION / DECIMAL / MILLIMETER EQUIVALENTS CHART

INCH FRACTION	INCH DECIMAL	MILLIMETER	INCH FRACTION	INCH DECIMAL	MILLIMETER	INCH FRACTION	INCH DECIMAL	MILLIMETER
. . . .	.003937	0,1000	9/32	.281250	7,1438	21/32	.656250	16,6688
. . . .	.007874	0,2000	19/64	.296875	7,5406	. . . .	.669291	17,0000
. . . .	.011811	0,3000	5/16	.312500	7,9375	43/64	.671875	17,0656
1/64	.015625	0,3969	. . . .	.314961	8,0000	11/16	.687500	17,4625
. . . .	.015748	0,4000	21/64	.328125	8,3344	45/64	.703125	17,8594
. . . .	.019685	0,5000	11/32	.343750	8,7313	. . . .	.708661	18,0000
. . . .	.023622	0,6000	. . . .	.354331	9,0000	23/32	.718750	18,2563
. . . .	.027559	0,7000	23/64	.359375	9,1281	47/64	.734375	18,6531
1/32	.031250	0,7938	3/8	.375000	9,5250	. . . .	.748031	19,0000
. . . .	.031496	0,8000	25/64	.390625	9,9219	3/4	.750000	19,0500
. . . .	.035433	0,9000	. . . .	.393701	10,0000	49/64	.765625	19,4469
. . . .	.039370	1,0000	13/32	.406250	10,3188	25/32	.781250	19,8438
3/64	.046875	1,1906	27/64	.421875	10,7156	. . . .	.787402	20,0000
1/16	.062500	1,5875	. . . .	.433071	11,0000	51/64	.796875	20,2406
5/64	.078125	1,9844	7/16	.437500	11,1125	13/16	.812500	20,6375
. . . .	.078740	2,0000	29/64	.453125	11,5094	. . . .	.826772	21,0000
3/32	.093750	2,3813	15/32	.468750	11,9063	53/64	.828125	21,0344
7/64	.109375	2,7781	. . . .	.472441	12,0000	27/32	.843750	21,4313
. . . .	.118110	3,0000	31/64	.484375	12,3031	55/64	.859375	21,8281
1/8	.125000	3,1750	1/2	.500000	12,7000	. . . .	.866142	22,0000
9/64	.140625	3,5719	. . . .	.511811	13,0000	7/8	.875000	22,2250
5/32	.156250	3,9688	33/64	.515625	13,0969	57/64	.890625	22,6219
. . . .	.157480	4,0000	17/32	.531250	13,4938	. . . .	.905512	23,0000
11/64	.171875	4,3656	35/64	.546875	13,8906	29/32	.906250	23,0188
3/16	.187500	4,7625	. . . .	.551181	14,0000	59/64	.921875	23,4156
. . . .	.196850	5,0000	9/16	.562500	14,2875	15/16	.937500	23,8125
13/64	.203125	5,1594	37/64	.578125	14,6844	. . . .	.944882	24,0000
7/32	.218750	5,5563	. . . .	.590551	15,0000	61/64	.953125	24,2094
15/64	.234375	5,9531	19/32	.593750	15,0813	31/32	.968750	24,6063
. . . .	.236220	6,0000	39/64	.609375	15,4781	. . . .	.984252	25,0000
1/4	.250000	6,3500	5/8	.625000	15,8750	63/64	.984375	25,0031
17/64	.265625	6,7469	. . . .	.629921	16,0000	1	1.000000	25,4000
. . . .	.275591	7,0000	41/64	.640625	16,2719	1-1/16	1.062500	26,9880

FORMULAS:

MULTIPLY		BY		TO GET
INCHES (in)	x	25.4	=	MILLIMETERS (mm)
FEET (ft)	x	0.3048	=	METERS (m)

MULTIPLY		BY		TO GET
MILLIMETERS (mm)	x	0.03937	=	INCHES (in)
METERS (m)	x	3.281	=	FEET (ft)

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